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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,205	04/19/2001	Shinichiro Eto	2001_0469A	1208

513 7590 08/09/2004

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WASHINGTON, DC 20006-1021

EXAMINER

TRUONG, CAMQUY

ART UNIT	PAPER NUMBER
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2127

DATE MAILED: 08/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/837,205

Applicant(s)

ETO ET AL.

Examiner

Camquy Truong

Art Unit

2127

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claims 1-25 are presented for examination.
2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The current title is imprecise.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 1-25 are rejected under 35 U.S.C 112, second paragraph, as being indefinite for failing to particularly as the invention.

a. The claim language in the following claim is not clearly understood:

i. As to claim 1, lines 2-5, it is unclear what is meant by "to run on ... to each of a plurality of tasks to run on a real-time OS and simulates". (i.e. it is not sure what the real-time OS simulator is trying to simulate and what is running in the simulator? The task processing thread or the plurality of tasks.); line 11, it is uncertain what is meant by "run by suspending and resuming" (i.e. the running task processing threads is suspended and then later is resumed?); line 12, it is not clearly indicated who has the capabilities of the multithread OS

(i.e. the task switching thread, the suspended task processing threads or the resumed task processing threads).

ii. As to claims 14 and 20, lines 3-5, it is unclear what is meant by "to run on ... to each of a plurality of tasks to run on a real-time OS and simulates". (i.e. it is not sure what the program for a simulation method is trying to simulate and what is running in the simulator? The task processing thread or the plurality of tasks.); line 12-13, it is uncertain what is meant by "run by suspending and resuming" (i.e. the running task processing threads is suspended and then later is resumed?); line 12, it is not clearly indicated who has the capabilities of the multithread OS (i.e. the task switching thread, the suspended task processing threads or the resumed task processing threads).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 6-7, 10-14, 17, 19-20 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borkenhagen et al. (US. 6,567,839 B1) in view of Applicant Admitted Prior Art (AAPA).

As to claims 1, 14 and 20, Borkenhagen teaches the invention substantially as claimed including: a task processing thread to run on a general-purpose multi-thread OS (abstract), comprising:

Task switching instruction means for receiving a request issued from said task processing thread and providing an instruction for switching the tasks in response to said request (col.12, lines 20-26 and lines 47-50); and

A task switching thread (thread switch logic, col. 11, line 24) for making selected one of said task processing threads run by suspending and resuming said task processing threads with capabilities of said multi-thread OS in cooperation with said task switching instruction means (col. 11, lines, 22-33; col.12, lines 53-55; col. 12, lines 54-55; col. 15, lines 42-45).

7. Borkenhagen does not explicitly teach that the system is a real-time OS simulator. However, AAPA teaches a real-time OS simulator (page 2, line 3).

8. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Borkenhagen and AAPA because AAPA's real-time OS simulator would increase the efficiency and reliability of Borkenhagen's system by simulate the process during software development.

9. As to claims 6 and 17, Borkenhagen teaches task switching instruction mean provide the instruction to said task switching thread after selecting a task processing thread to run next (col.11, lines 22-32; col.12, lines 19-26). The task switching thread has to determine the active thread first in order to receive the instruction for switching the task;

Task witching thread runs with a higher priority than said task processing threads and, in response to the instruction, suspend a preceding running task processing thread and then resumes the selected task processing thread (col.11, lines 23-35. The task switching thread determines which thread to execute so it has to run with a higher priority).

10. As to claims 7, Borkenhagen teaches task processing thread means for creating said task processing thread (col.16, lines 38-41 and lines 55-60).

11. As to claims 10-11,19 and 25, Borkenhagen teaches interrupt-handling mean for receiving an interrupt request issued by an interrupt thread that generates a pseudo-interrupt, suspending a running task processing thread, calling an interrupt handler corresponding to the interrupt for resuming (col.6, line 3 and lines 29-41; col.11, lines 32-35;col.15, lines 41-46).

12. As to claims 12, Borkenhagen teaches interrupt thread includes a system clock interrupt thread that generates a pseudo-interrupt at predetermined time intervals (col.15, lines 2-6; col.17, lines 61-62; col.18, line 44).

13. As to claim 13, Borkenhagen teaches interrupt thread creating means for creating said interrupt thread (col. 23, lines 9-10).

14. Claims 2-3, 5 and 15 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borkenhagen et al. (US. 6,567,839 B1) in view of Applicant Admitted Prior Art (AAPA) and further in view of Milot et al. (US. Patent 6,437,788 B1).

15. As to claims 2,15 and 21, Borkenhagen teaches task switching instruction means selects a task processing thread to run next (col.15, lines 45-46), provides the instruction for switching the tasks to said task switching thread (col.12, lines, 22-26 and lines 46-49) and

In response to the instruction, said task switching thread resumes the selected task processing thread after a preceding running task processing thread is suspend (col.11, lines 32-35; col. 12, lines 54-55).

16. Borkenhagen and AAPA do not explicitly teach suspend the task processing thread that has issued said request. However, Milot teaches



suspending the task processing thread that has issued said request (col.4, lines 62-64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Borkenhagen, AAPA and Milot because Milot's suspending the task processing thread that has issued request would eliminate the requirement for large amounts of kernel memory being dedicated to texture.

17. As to claim 3, Borkenhagen teaches in response to the instruction for switching the tasks, said task switching thread checks at predetermined intervals whether the preceding running task thread is suspend or not (col. 6, lines 14-15; abstract; col.18, lines 52-27).

18. As to claim 5, Borkenhagen teaches task switching instruction means provides the instruction to said task switching thread after said task switching thread is enable to start processing (col.11, lines 23-33).

19. Claims 4,16 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borkenhagen et al. (US. 6,567,839 B1) in view of Applicant Admitted Prior Art (AAPA) and in further in view of Hutchison et al. (US. Patent 6,026,428).

20. As to claims 4, 16, 22 and 23, Borkenhagen teaches task switching instruction means selects a task processing thread to run next (col.7, lines 60-63; col.11, lines 23- 25 and lines 44-45), provides the instruction for switching the tasks to said task switching thread (col.12, lines, 21-26 and lines 49-50; col.8, lines 46-49) and

In response to the instruction, said task switching thread suspends a preceding running task processing thread (col. 11, lines 23-35);

21. Borkenhagen and AAPA do not teach setting the task processing thread that has issued said request in a waiting state. However, Hutchison teaches the thread manager put the thread into a wait state.

22. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Borkenhagen, AAPA and Hutchison because Hutchison's setting the task processing thread that has issued said request in a waiting state would provide a flexible mechanism to allow all of these programs/services to coexist and yet have the execution thread have the Context set up.

23. Claims 8-9,18 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borkenhagen et al. (US. 6,567,839 B1) in view of Applicant Admitted Prior Art (AAPA) and further in view of Shi et al. (US. 6,757,897 B1).

24. As to claims 8-9, 18 and 24 Borkenhagen and AAPA disclose the claimed limitation subject matter in claim 1, except the claim limitation " exception handling ". Shi teaches exception handling (col. 1, lines, 43-45).

25. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Borkenhagen, AAPA and Shi because Shi's exception handling would improve the integrity of Borkenhagen and AAAP's system by being able to response immediately to a condition such as a network fault to prevent a loss of data, interruption of network service or complete device failure.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Camquy Truong whose telephone number is (703) 305 - 8888. The examiner can normally be reached on 8 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 703-305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIP. Status information for unpublished applications is available through Private PAIR only. For

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Camquy Truong



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